
Release Note: CalmSHINE16Plus V2.05 Release History



Title	CalmSHINE16Plus V2.05 Release Note
Keywords	CalmSHINE16Plus , SecuCalm, CalmRISC16
Abstract	This document is the release note of CalmSHINE16Plus

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Revision History

Date	Version	Author	Amendment
Jul 21, 2009		CalmSupport	Create
Jul 22, 2009		CalmSupport	Add compiler part
Jul 24, 2009		CalmSupport	Add compiler part
Oct 1, 2009		CalmSupport	V2.0 Update History
Dec 9, 2009		CalmSupport	V2.01 Update History
Jan 28, 2010		CalmSupport	V2.01a Update History
May 6, 2010		CalmSupport	V2.02 Update History
Jul 27, 2010		CalmSupport	Compiler,,Assembler,Linker part added
Nov 29, 2010		CalmSupport	V2.03 Update History
Sep 02, 2011		CalmSupport	V2.04beta Update History
Jan 04, 2012		CalmSupport	V2.04beta a Update History
Aug 01, 2012		CalmSupport	V2.04 Update History
May 21, 2014		CalmSupport	V2.05 Update History
Oct 6, 2014		CalmSupport	Language Patch

Contents

1	How to get this package	1
2	Release History	1
3	What's New	3
3.1	CalmSHINE16Plus v2.05	3
3.1.1	Build Tools are updated	3
3.1.2	Disassembly by Address Order	3
3.1.3	A DPJ file is created even though there is no *.elf file.	4
3.1.4	UTF-8 Format file Display.	5
3.1.5	More multi-byte characters can be displayed.	5
3.1.6	Device related files are included in the Install Package.	5
3.1.7	Special Area Erase Option	5
3.1.8	Command Line Build Option	6
3.2	CalmSHINE16Plus v2.04	8
3.2.1	Build Tools are updated	8
3.2.2	Printf outputs characters at once	8
3.2.3	DVM supports the Memory Limitation.	8
3.2.4	Simple Timer Setting is supported in SecuCalm	8
3.2.5	Cursor History function is added	8
3.2.6	Address Field is added to Watch / Variable window.	9
3.2.7	Build tool options settings are printed on each window.	9
4	Matters that Require Attention	10
4.1	CalmSHINE16PlusV2 v2.05 UTF-8	10
4.2	CalmSHINE16PlusV2 v2.04: Semihosting function	10
4.3	New IM500 firmware for SecuCalm	10
4.4	CalmSHINE16PlusV2 v2.03: New USB device driver for IM-500	10
4.5	Support SecuCalm and CalmRISC16 Devices in One environment	10
4.5.1	Project Conversion to SecuCalm	10
4.5.2	New Emulator for SecuCalm Smart card Devices	10
4.5.3	When using existed CalmSHINE16Plus CalmRISC16 Project	10
4.6	Change of Step Out operation and Step in operation	11
4.7	When using S3CC40D MCU Devices	11
4.8	Support On Chip Timer Feature for SecuCalm Devices	12
5	Revision History after releasing V2.0 version	13
5.1	GUI	13
5.2	Language tools	18
5.2.1	Compiler - UCC.exe	18
5.2.2	Assembler	23
5.2.3	Linker	24
5.2.4	Librarian - CalmSDKAr.exe	27
5.2.5	Library	27

1 How to get this package

You can download CalmSHINE16Plus V2.05 from the following website.

<http://www.samsung.com/calmsdk>

*note) Device file package, you can contact to regional FAE.

2 Release History

Each tool version according to Packages

Tool Ver		Beta	Official v2.00 Release	Official v2.01 Release
		Jul 25, 2009	Oct 1, 2009	Dec 11, 2009
GUI& Debugger	CalmSHINE16Plusv2.exe	V2.0 Beta	V2.0	V2.01
Compiler	Ucc.exe	V1.03	V1.03f	V1.03h
Assembler for SecuCalm	Calmasm16e.exe	V1.00k	V1.00l	V1.00n
Assembler for CalmRISC16	CalmSDKAs.exe		V1.01a	V1.01c
Linker for SecuCalm	Calmlink16e.exe	V1.00j	V1.00n	V1.00s
Linker for CalmRISC16	CalmSDKLd.exe		V1.01k	V1.01q
Librarian	CalmSDKAr.exe	V1.00d	V1.00d	V1.00d
Library			V1.02h	V1.03h

Tool Ver		V2.02	V2.03	V2.04
		May 7, 2010	Nov 29, 2010	Aug 1, 2012
GUI& Debugger	CalmSHINE16Plusv2.exe	V2.02	V2.03	V2.04
Compiler	Ucc.exe	V1.04a	V1.04f	V1.05p
Assembler for SecuCalm	Calmasm16e.exe	V1.01a	V1.01d	V1.01f
Assembler for CalmRISC16	CalmSDKAs.exe	V1.02a	V1.02a	V1.02a
Linker for SecuCalm	Calmlink16e.exe	V1.01	V1.01d	V1.01l
Linker for CalmRISC16	CalmSDKLd.exe	V1.02	V1.02b	V1.02c
Librarian	CalmSDKAr.exe	V1.00d	V1.00d	V1.00d
Library		V1.04a	V1.04f	V1.05o

Tool Ver		V2.05	V2.05 patch
		Jun 26, 2014	Jul 17, 2014
GUI& Debugger	CalmSHINE16Plusv2.exe	V2.05	V2.05
Compiler	Ucc.exe	V1.06h	V1.06k
Assembler for SecuCalm	Calmasm16e.exe	V1.01f	V1.01f
Assembler for CalmRISC16	CalmSDKAs.exe	V1.02a	V1.02a
Linker for SecuCalm	Calmlink16e.exe	V1.01t	V1.01u
Linker for CalmRISC16	CalmSDKLd.exe	V1.02e	V1.02e
Librarian	CalmSDKAr.exe	V1.00d	V1.00d
Library		V1.05q	V1.05q

3 What's New

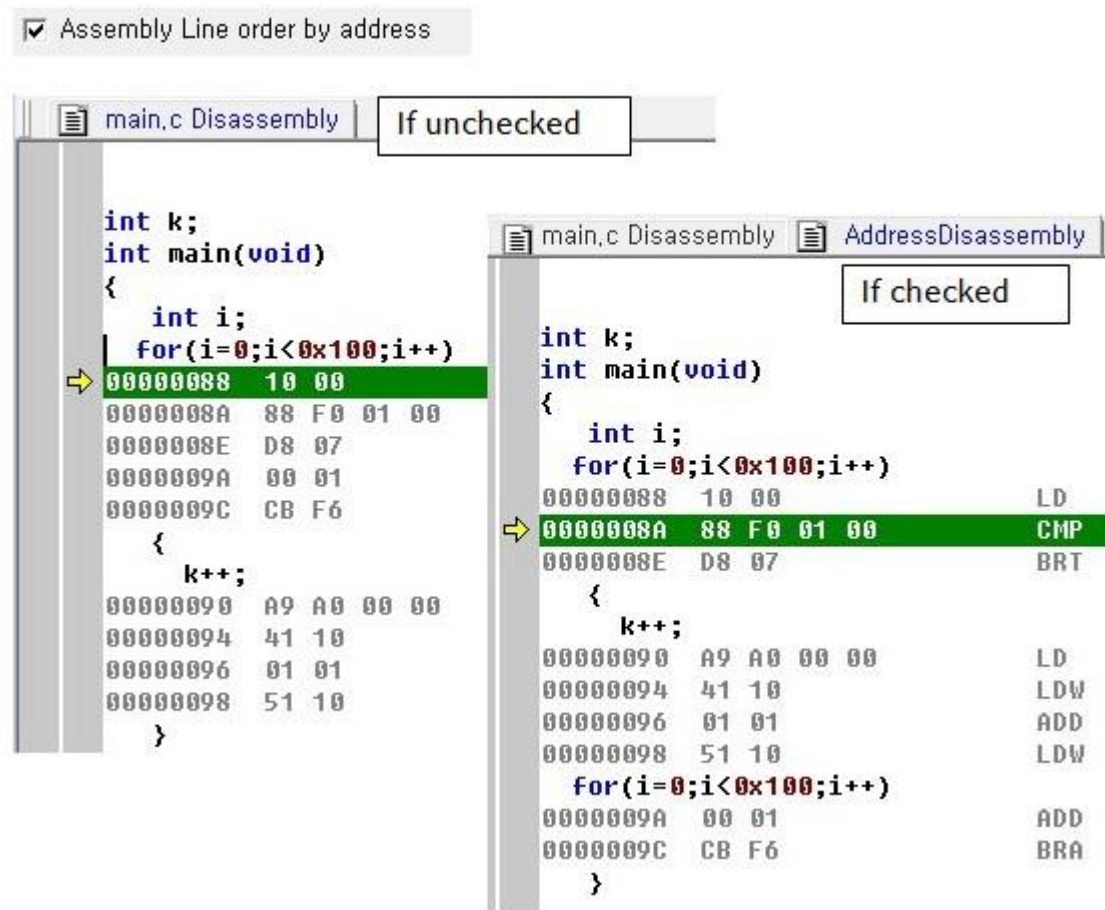
3.1 CalmSHINE16Plus v2.05

3.1.1 Build Tools are updated

Compiler/ Linker / Library are updated.
For more information, refer to 5.2 Language tools part.

3.1.2 Disassembly by Address Order

To support disassembly by address order, 'Assembly line order by address' option is added to [Option]-[Tools] dialog.



[Note - AddressDisassembly mode]

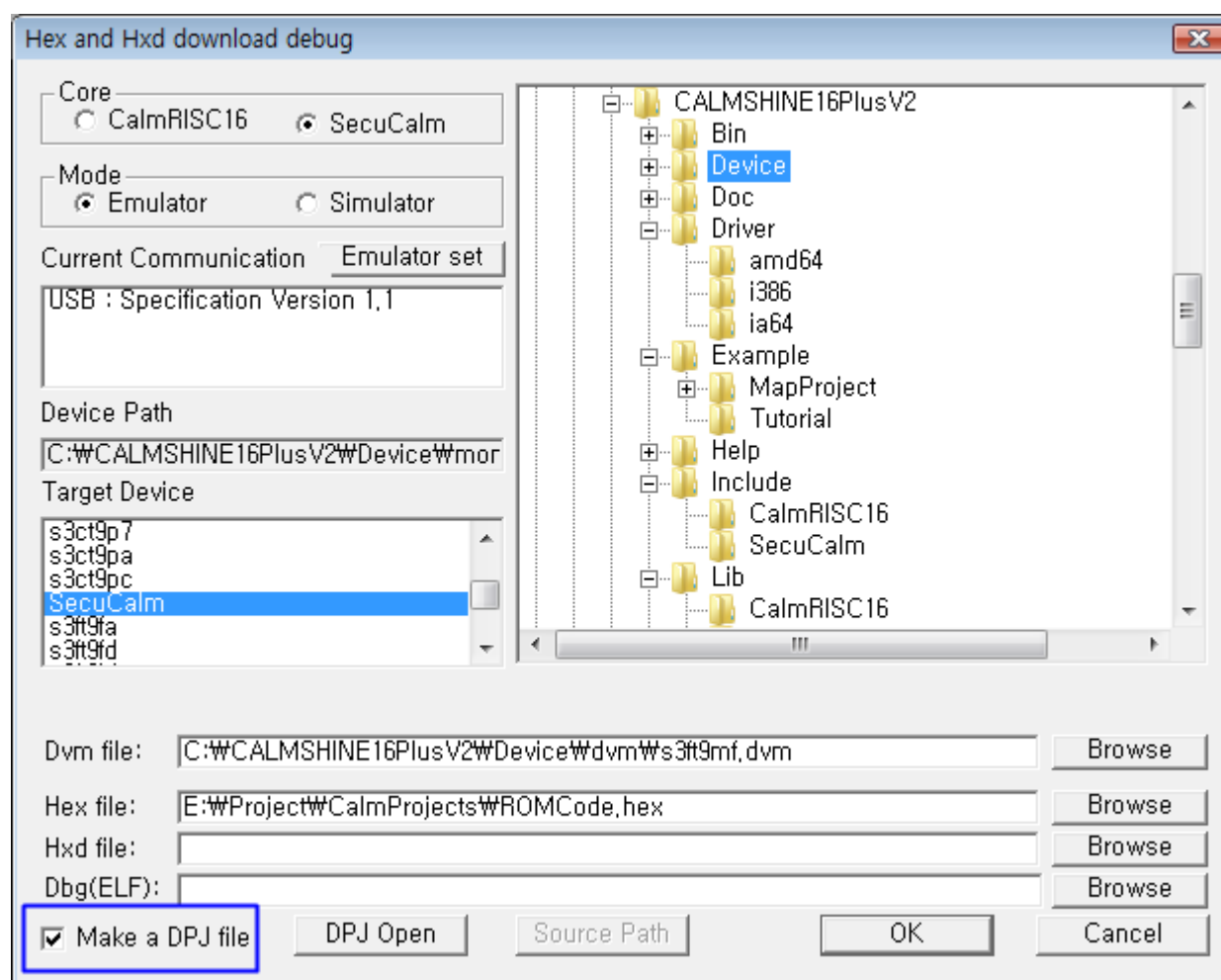
- The AddressDisassembly window appear in C/Disassembly mode.
- Source_Name.Disassembly is displayed with no address older.
- Current PC bar is displayed only in AddressDisassembly window.

3.1.3 A DPJ file is created even though there is no *.elf file.

Regarding [File]-[Hex file debugging Open] function,
In the previous version, a dpj file was created only if the *.elf file was set in the dialog.
Now, a dpj file is created even though any *.elf file is not set in the dialog.
As the previous version, the *.dpj file is created at 'Stop Debugging'.

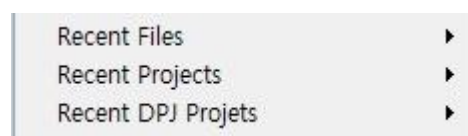
DPJ file location

- if ELF file is set: DPJ file is created in the upper folder of elf file.
- if ELF file is not set: DPJ file is created at the folder where the *.hex file is.



Recent DPJ file List

Recent Open DPJ files will be listed in 'Recent DPJ Projects'.



3.1.4 UTF-8 Format file Display.

CalmSHINE16PlusV2 2.05 can open the UTF-8 Format source file.
However, you should caution regarding compile and save the UTF-8 format file.

[Caution: Limitation]

- Saving UTF-8 File Issue.

CalmSHINE16PlusV2 2.05 converts UTF-8 to ANSI format for display. As the result, some character cannot be converted and displayed as '??'. In this state, if you edit source and saving it again, '??' character will be broken. So it is not recommended to save any UTF-8 format file in CalmSHINE16PlusV2.

- BOM mark in UTF-8

The compile will fail if 'BOM' mark is located in the beginning of source file even though CalmSHINE16PlusV2 display the file.

So when you save the source file in the other editor, please save it without 'BOM'.

```
Offset(h) 00 01 02
00000000 EF BB BF
```

- Compiler does not support UTF-8

Current Calm Compiler does not support UTF-8.

For example, any character consists of '\(0x5C)' and others, the build will fail.

3.1.5 More multi-byte characters can be displayed.

3.1.6 Device related files are included in the Install Package.

Device related files are included in the install package.

- DVM folder: *.dvm files
 - MON folder: *.mon files and memory16.map file
 - TargetOS folder: IM500S firmwares and OsFirmware16.map file
- However, *.h / *.md file is not included.

3.1.7 Special Area Erase Option

Special Area Erase option can be set in the DVM file. The default option is 'Erase TRUE'

Caution:

- This option is only available to 80nm SecuCalm devices.
(S3CT9xxx and S3FT9Kx devices are not supported)
- New firmware is required.

```
// Erase the special area
SETFLAG
{
    SPECIAL_AREA_ERASE    TRUE
}
```

```
// No Erase the special area
SETFLAG
{
    SPECIAL_AREA_ERASE    FALSE
}
```

3.1.8 Command Line Build Option

CalmSHINE16PlusV2 2.05 supports arguments to build an image without executing the GUI.

Format

CalmSHINE16PlusV2.exe <option> <"Project_Name">

Example

To Rebuild All,

```
C:\CALMSHINE16PlusV2\Bin> CalmSHINE16PlusV2 -rebuildall "D:\MPj\Getting_Start.prj"
```

To Make,

```
C:\CALMSHINE16PlusV2\Bin> CalmSHINE16PlusV2 -make "D:\MPj\Getting_Start.prj"
```

To Create a Build Command File,

```
C:\CALMSHINE16PlusV2\Bin> CalmSHINE16PlusV2 -makefile "D:\MPj\Getting_Start.prj"
```

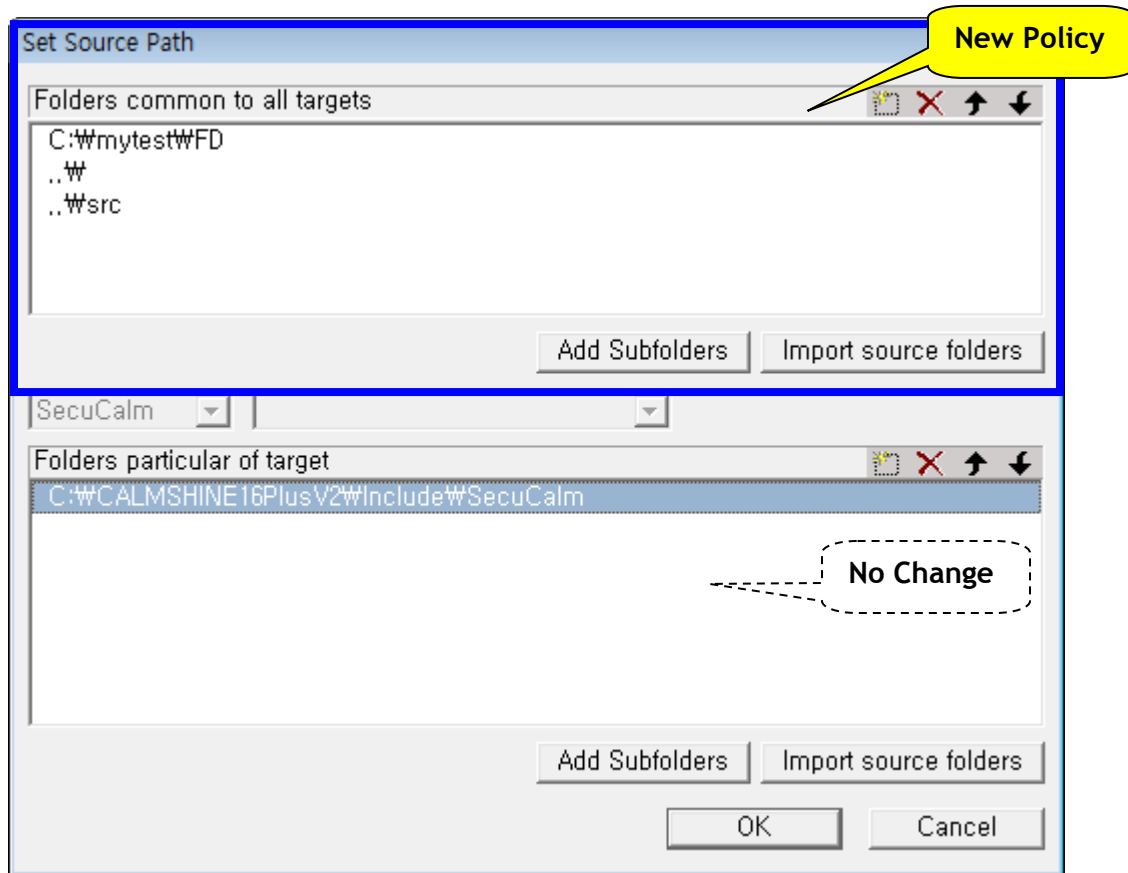
3.1.9 Source Path Policy is changed

[Option]-[Source Path..]-'Folders Common to All targets' policy is changed.

In case of the previous version, the path was changed to the relative from CalmSHINE16PlusV2 internally.

Now, in case of [Option]-[Source Path..]-'Folders Common to All targets'

1. Keep the path information as it is registered.
 - If an absolute path is added, it keeps the absolute path.
 - If a relative path is added, it keeps the relative path.
2. Relative Path Policy is changed.
 - If a general project file is opened, it is the relative path from the project file.
 - If a 'Hex file debug open' project with an *.elf, it is the relative path from the elf file.



3.2 CalmSHINE16Plus v2.04

3.2.1 Build Tools are updated

3.2.2 Printf outputs characters at once

It can print several characters at once in the semihosting output function, for example 'printf()' (The previous version printed only a character at once.) To use it, you should use a new library(v1.05n) which is installed with CalmSHINE16PlusV2 v2.04 .

3.2.3 DVM supports the Memory Limitation.

The latest IM-500S firmware supports the memory range limitation setting in the DVM file. To do it, a 'Physical Memory Area' block should be used in DVM file.

To use the function, new DVM/OS map file/firmware/CalmSHINE16PlusV2 v2.04 are required.

3.2.4 Simple Timer Setting is supported in SecuCalm

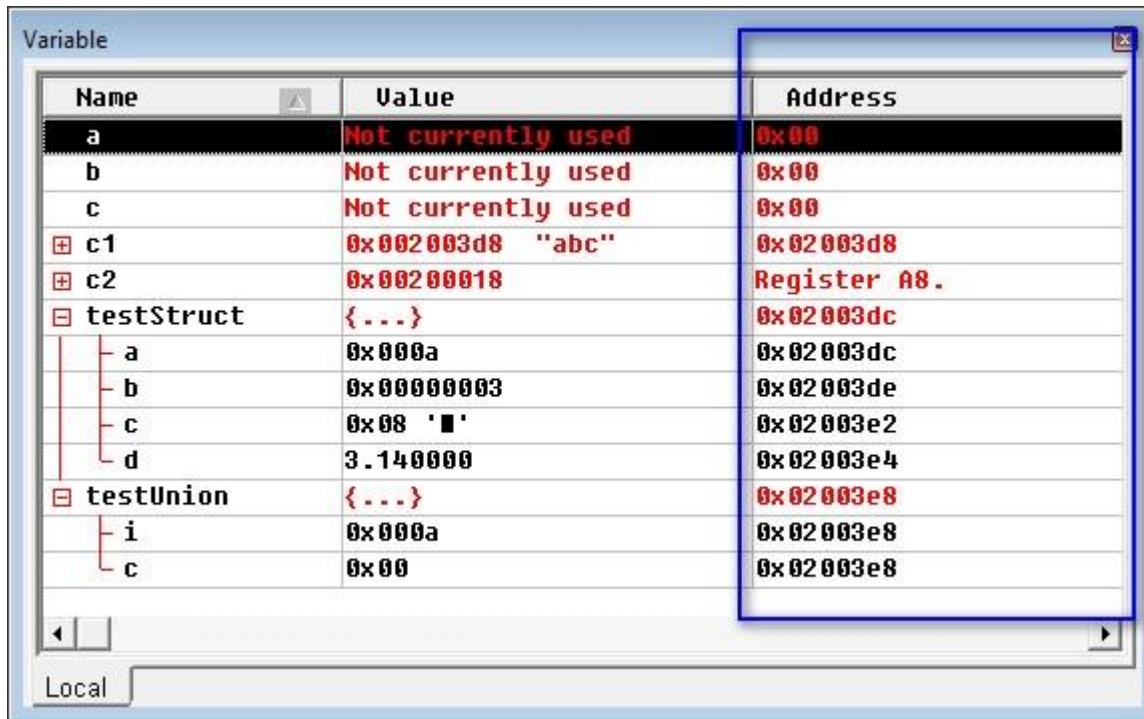
[Setup]-[OnChip Timer Start Setup] / [Setup]-[OnChip Timer End Setup] menus are added.



3.2.5 Cursor History function is added



3.2.6 Address Field is added to Watch / Variable window.



Name	Value	Address
a	Not currently used	0x00
b	Not currently used	0x00
c	Not currently used	0x00
⊕ c1	0x002003d8 "abc"	0x02003d8
⊕ c2	0x00200018	Register A8.
⊖ testStruct	{...}	0x02003dc
a	0x000a	0x02003dc
b	0x00000003	0x02003de
c	0x08 'H'	0x02003e2
d	3.140000	0x02003e4
⊖ testUnion	{...}	0x02003e8
i	0x000a	0x02003e8
c	0x00	0x02003e8

Local

3.2.7 Build tool options settings are printed on each window.



```
User Input
-
-wam-common -Map "$*.map" -z "WFilesDeviceWmdWs3fc9ac.md"
-lcszdb -O t
```

4 Matters that Require Attention

4.1 CalmSHINE16PlusV2 v2.05 UTF-8

CalmSHINE16PlusV2 2.05 can open the UTF-8 Format source file.

However, you should take care of compiling and saving it.

- CalmSHINE16PlusV2 2.05 converts UTF-8 to ansi format for display. As the result, some character cannot be converted and displayed as '??' or ' '. If you edit source and saving it again in CalmSHINE16PlusV2, '??' character will be broken.

So it is not recommended to save any UTF-8 format file in CalmSHINE16PlusV2.

- The compile will fail if 'BOM' mark is located in the beginning of source file. So when you save the source file in the other editor, please save it without 'BOM'.

4.2 CalmSHINE16PlusV2 v2.04: Semihosting function

CalmSHINE16PlusV2 2.04 can prints several character at once in the semihosting output function, for example 'printf()' (The previous version printed only a character at once.) To use it, you should use a **new library(v1.05o)**.CalmSHINE16PlusV2 v2.04

4.3 New IM500 firmware for SecuCalm

You can get the device file package from regional FAE for selection device in setting of project option or project creation. This pack helps you to automatically allocating device files officially published.

4.4 CalmSHINE16PlusV2 v2.03: New USB device driver for IM-500

We have upgraded the USB driver for IM500 in-circuit emulator. It is included in the install package but the installer does not install the driver automatically. You cannot connect IM500 via USB interface unless you install new USB driver. For more information, refer to 'Install_New_USB_Driver.rtf' or 'CalmSHINE16Plus_Manual_IDE.pdf'

4.5 Support SecuCalm and CalmRISC16 Devices in One environment

4.5.1 Project Conversion to SecuCalm

CalmSHINE16Plus V2.0 additionally supports new 16bit core type "SecuCalm" of Samsung. Please refer "CalmSHINE16Plus_PortingGuide_IDEV2.0.doc" in "\Doc" directory for Project Conversion from old project type.

4.5.2 New Emulator for SecuCalm Smart card Devices

IM-500 is new emulator for SecuCalm Smart Card Devices. This emulator support new feature like firmware automatic upgrade. Please refer the install guide (USB driver) and usage about this in "CalmSHINE16Plus_Manual_IDE.pdf" file in \Doc folder. If you want to get the all calmRISC16/SecuCalm **Device file Package** and IM-500 **Emulator Firmware**, Please contact regional FAE.

4.5.3 When using existed CalmSHINE16Plus CalmRISC16 Project

CalmSHINE16Plus V2.0 directory hierarchy is changed from CalmSHINE16Plus V1.xx.

It makes to need some changes options when building of your CalmRISC16 CalmSHINE16Plus project.

***note) CalmSHINE16Plus V2.0 support CalmRISC16 and SecuCalm **CalmSHINE16Plus Project type**. Not CalmSHINE16 Project. CalmSHINE16 Project can be just loaded for Project Conversion.

4.5.3.1 Default project (when no option change)

When CalmSHINE16Plus V1.xx IDE create project, it use default Device files like startup file(\SFiles) and Devicename.dvm(\Include\mon) file and Devicename.md(\ldscripts) for Device dependent information. When building old project, It occurs linker error because V2.0 IDE expects to find out the linker description (Memory Description - md) file from default directory (\Device\md).

When you want to success to **build and debug** your V1.xx project in V2.0,
Please copy the device dependent files from old V1.xx IDE directories to V2.0 IDE directories

Then select your device in Project Option page and Rebuild all.

- CSP\include\mon\Devicename.mon -> CSPv2\Device\mon\Devicename.mon
- CSP\include\mon\Devicename.dvm -> CSPv2\Device\dvm\Devicename.dvm
- CSP\ldscripts\Devicename.md -> CSPv2\Device\md\Devicename.md
- CSP\Sfile\Cstartupsdk_Devicename.asm -> CSPv2\Startup\Target\Cstartupsdk_Devicename.asm

****note) You can get the device file package from regional FAE for selection device in setting of project option or project creation. This pack helps you to automatically allocate device files officially published.

4.5.3.2 Recommended way to create project

The user can set their own device dependent files position by changing options using **relative path** compared to Project file location.

- Project\Linker tab\Advanced category\Memory Description File(MD file)

4.6 Change of Step Out operation and Step in operation

V2.0x IDE support “Step Out” menu on Disassembly view, and supports C Standard Library built with debug information.

It make available step out operation in disassembly view some cases, but it influences to decrease speed on Loading time at “Start Debugging” and can influence Step speed, because SYMBOL Total Count is increased. And the side effect, when you want to “Step In”, UI can show sometimes the disassembly view if the current line include library function call. It caused by library built **with debug information** (default standard library optimization level is “Minimize Size(Debug)” in Option/Project/Linker/Advanced/Optimization Level of standard library).

So if you select the other standard library optimized level without debug information, then you can get the old style “step in”(not into disassembly view when C source Step In).

And for code optimization, some c function use pushreg/popreg(return) library in prolog and epilog,
“__szPopSaved, __szPopSavedEx_R11R12_to_R1R0, __szPopSavedEx, __szPopAllEx”, When the user wants to execute the “Step out”, in this case is needed **two times of “step out”** operation for reaching library function then execution it. If the user see the “step out” operation make the pc to allocate end line of c function or disassembly view, then please click “step out” one more time.

In assembly user source, step operation is the same action with disassembly view.

4.7 When using S3CC40D MCU Devices

Please should set “**Debugging under low frequency (lower then 2.5MHz) or RWG activation**” in Options/Tools Menu when using latest v1.46 - C1600 emulator.

And 40D user should set “**Extend Segment address record(HEX86)**” in Utils Menu. It support “intelhexutil.exe” post build command for 40D user at first one time.(MCU customer requirement). If you don’t need this post build command, please remove this command line from post build project option.

S3CC40D user need to do 3.3.3 when using existed CalmSHINE16Plus project and additionally work to do for Environment migration. (Device vendor need to prepare below device file package for user convenience)

5 Revision History after releasing V2.0 version

5.1 GUI

Version	Released date	Comments
V2.05	Oct 06, 2014	- (Language Update Only)
V2.05	Jul 17, 2014	- (Language Update Only)
V2.05	Jun 26, 2014	- [New] Disassembly by address order is supported. - [New] UTF-8 format file can be opened. (Note: compiler does not support UTF-8) - [New] More multi byte character can be displayed. - [New] DPJ file can be created without an elf file. - [New] SecuCalm Device files(.mon,.dvm) are added to the install package. - [New] Add a short cut keys - cursor history function. - [New] Special Area Erase option can be set in DVM file. - [New] Breakpoint can be set in the include file. - [New] Add Command Line Build Options. - [Spec] Internal Build timeout value is increased to 60seconds. - [Spec] [Option]-[Source Path] policy is changed. - [Fix] Program was terminated at stepping in case of specific image. - [Fix] Program was terminated in 'Hex file open debug' if home group is enabled. - [Fix] Program was terminated if the mouse cursor was moving during the download process. - [Fix] Program was terminated when the user tried to start debugging if an assembly file included a file. - [Fix] The program could not stop the execution if stop/idle mode was requested very fast. - [Fix] The project was built automatically at start debugging after it was open two times. - [Fix] The memory range was not changed if devices is changed devices with mouse wheel in ROM/EEPROM generation. - [Fix] The 2nd pointer value in a structure variable was not shown correctly in the watch window if it was chained. - [Fix] USB could not be connected if USB was reconnected before the download error message box was closed. - [Fix] The source path is not set correctly if the path name is 'CalmSHINE16PlusV2'+ one or more '_' - [etc] Connection/Communication Error messages are changed.
V2.04	Aug 01, 2012	- [Fix] The modified source in the prebuild stage was not compiled at [Build]-[Make] in v2.04.

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V2.04beta b	May 04, 2012	- [Spec] nSize of characters are printed at once in semihosting output. To use it, you should use a new library(v1.05o). The previous version printed only a character at once. - [Fix] When a user tried to make a library project for CalmRISC, it was made for SecuCalm - [Fix] PC was not changed if a user tried to input a value above 0xffff in the Watch Register view. - [Fix] There was an Internal Buffer error when trying to change the values in ROM/EEPROM generation view. - [Fix] Program was terminated when a user tried to delete NULL path even if there was no registered path in the Project option. - [Fix] No error message was displayed even if it was failed to save the modified file - [Fix] User input address was not set in On chip Timer sometimes. - [Fix] It failed to get the correct variable information because of Was DLL problem. - [Fix] Incorrect hex value parsing in 'SetPC' function - [Fix] Program was terminated if incorrect address range was input in the memory fill - [Fix] Connection was failed after a user selected 'No' in IM500S firmware update dialog.
V2.04beta a	Mar 21, 2012	- [Fix] Min/Avg value, in OnChipTimer view, were not correct. - [Fix] The changed contents was not applied at 'build-make' because the file was not saved in a specific case. - [Fix] Options setting display was not updated when Assembler/Compiler/Linker Advanced option was changed - [Fix] An error message was appeared at reloading after changing the Tab size in the Tool option.

V2.04beta	Aug 04, 2011	- [SPEC] The dependency is not updated if 'Build All' is failed. - [SPEC] Warning message is not shown even if a file line number is over 10000. - [Spec] Disable [Debug]-[download data multi file] in non-flash device. - [Spec] Function Tree in Go/Run Setup is enlarged a little bit. - [New] supports SecuCalm internal Memory size setting. DVM file should be changed, new IM-500S firmware required. - [New] Shows Build options in [Option]-[Project] - [New] Add 'Onchip timer Start/End' for SecuCalm - [New] Add 'Cursor History function' - [New] Add 'Address column' in Watch/Variable window - [FIX] Build menu was disabled, if user selected non-exist device and then an available device. - [Fix]'Go to Definition' menu was disabled, if mode is changed from 'disassembly' to 'source' mode - [Fix] 'Step Out' could not return from the 'printf' if a user stepped in 'printf' library. - [Fix] Abnormal termination if a special character was written in 'Address' field in 'Go Setup' - [Fix] Abnormal termination if user double-clicked the disabled dialog box in 'map file link project' - [FIX] Call Stack view was not updated if the debugger failed to find the Next Information. - [Fix]CalmSHINE16 was terminated when trying to download *hxd that exceeding the EEPROM range. - [Fix] Disable 'Run MDS Timer' menu in C3200. - [Fix] [Option]-> [Project]-'Pre-build' option or command was not updated immediately (make or rebuild twice was required) - [Fix] *.elf file in Debug folder was deleted when building in Release mode. - [Fix] Step Over in __asm("stop"); was not correct - [Fix] Garbage Cycle value was shown in the status when an emulator was used. - [Fix] In case of BSR instruction, the target address was not displayed in disassembly. - [FIX] When you select '[Debug]-[Start Debugging]', if 'Verify Download' option is checked, the "Download error at 0x0" message box appears. - [Fix] R0, R1 was changed when entering a function in S3FC9Ax with OPENice-C1605 - [Fix] Incorrect value was written to 'r11' in SecuCalm simulator if 'mov r10r11,a12' is executed. - [Fix]When executing 'Make' after changing 'dvm' file in the project option, Rebuild All was executed instead of Make, if the project was created and never saved.
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V2.03	Nov 18, 2010	- [Spec] Save only the compiled file when [Build]-[Compile] - [Spec] 'Save as' function works just as other window programs. - [Spec] IM-500S version is shown as an hex value in 'Help'-'About' - [Spec] 'Restart at Stop Instruction' is disabled in IM-500S - [FIX] Warning message appears when changing SR_T in Register window. - [FIX] The value cannot changed in specific case in Variable/Watch window - [FIX] The restart address is incorrect if a user stops the program in STOP mode and 'Restart at Stop Instruction' option is checked. (CalmRISC16 cored device) - [FIX] Device selection error in project option when opening an old project - [FIX] 'Continue Go' works just as single step after semi-hosting function - [FIX] in S3F40D device, SW breakpoint is not removed by mouse click - [FIX] in S3F40D device, 'Download Verify' error. - [FIX] Fail to find address when 'drag&drop' a variable from the debug window to a memory window - [FIX] IM-500S Firmware version is shown incorrectly in some PC - [FIX] The program is terminated when open a NULL file in the project window. - [FIX] 'Option'-'Tools'-radix option is not applied in Debug mode - [FIX] 'Dup' instruction was worked incorrectly in Simulator mode - [FIX] In specific case, when open a project in other PC, the device is not red correctly if the device folder was set to the user defined location. - [FIX] 'Debug'-'Verify Image' function does not work correctly.
V2.02	May 6, 2010	- [NEW] Support the On chip Timer Setup in secucalm Device - [NEW] Support MCU S3CC40D Device - [NEW] Support Reset signal when start debugging and reloading for clearing system register before downloading - [FIX] Build skip issue because of Object file deletion bug - [FIX] Breakpoint setting was denied after SMI instructions - [FIX] Read stdout pipe error when building - [FIX] Changed the Options menu for jtag/internal clock frequency set bug - [FIX] Problem Debugging under low frequency or RWG activation - [FIX] Problem step some instruction when disassembly view - [FIX] MAKE Reflect modification of source in Prebuild stage - [UPD] Removed "Disable Autoupdate Header Dependency" menu because it works by default - [UPD] remove version string from executables head title and editor background because confusion between Package and UI. (use Help/About CalmSHINE16Plus/Tool info for version report)

V2.01	Dec 10, 2009	- [NEW] Flash chip erasing by IM500 is supported. (with new IM500 firmware for SecuCalm) - [NEW] Verifying flash chip erasing is performed by IM500 (with new IM500 firmware for SecuCalm) - [NEW] Upgraded USB driver for IM500 in-circuit emulator - [FIX] IDE is sometimes crashed when stepping in disassembly view under OpenICE-C3200 for CalmRISC16 - [FIX] The length of a record in the hex file generated by 'ROM Generation' is different from the length specified by the user. - [FIX] Downloading hex/hxd file for Flash Device with 'Hex and Hxd download debug' is unable - [FIX] Modifying a header file listed in 'Project File view' does not compile a source file that includes the header file when user selected 'Make' - [FIX] Finding value from Memory Views failed if memory layout specified in .dvm is not sorted by ascending order. - [FIX] Modifying value in Registers view was not reflected into the view unless refreshing the view. - [FIX] Problems with handling relative path names in 'Include Path' of Project Option - [FIX] Incorrect pointer value in Watch variables view and Locals view.
V2.0	Oct 1, 2009	- [NEW] Support SecuCalm Device and CalmRISC16 Device in One environment - [NEW] 'Save options when OK button is pressed' check boxes in Tool Options and Emulator Options dialog box. The setting options for those dialog boxes are now stored into the Windows Registry when they are closing by selecting OK button. - [NEW] Add to display IM-500 Firmware Version on Debugging State - [NEW] Enhanced the speed of refreshing Watch variables view and Variables view. - [NEW] The tree view of project items in Project options dialog box highlights (Bold character) an item of a source file if it has different option from the project. ("Same as Project Options" check box is not selected) - [NEW] Enhanced the speed of retrieving header dependency information with Assembly source Header dependency - [NEW] Step out from disassembly view that does not include source code is enabled if it has frame information. - [NEW] Added an option to decide if the notification message for IDLE/STOP mode is displayed - [NEW] Enhance to generate the many different values result by Verify Image Menu on Outputdir/VerifyImage.txt - [NEW] When Simple HW breakpoint setup, UI change condition value to "OR" forcibly - [FIX] Many bug fixes in Watch variables view, Variables view, Code/Data memory views, Watch registers view and Disassembly view. - [FIX] Many bug fixes in Hardware breakpoint with code area.
V2.0 Beta	Jul 25, 2009	- First Release to limited customer

5.2 Language tools

5.2.1 Compiler - UCC.exe

Version	Released date	Comments
V1.06k	Oct 07 2014	- [FIX] re-fix of bugfix of CSE optimization from (1.06d-1.06f) versions : there was generation of slow code in some cases on Ospeed.
V1.06j	Oct 01 2014	- [NEW] PA-like optimization is implemented in compiler to replace --PA option, which requires 3rd party tool PA.exe. It could be activated with - Osize(+PAI). (SecuCalm only)
V1.06i	Jul 07 2014	- [NEW] A number of size optimizations is implemented.
V1.06h	May 11 2014	- [FIX] Refix of 'Can't allocate register variable (Case #1)' internal error for more complex expressions.
V1.06g	May 06 2014	- [FIX] Fix of 'Can't allocate register variable (Case #1)' internal error. - [NEW] Optimization of bitshift operations.
V1.06f	Apr 09 2014	- [FIX] Fix of 'duplicate symbol' error for inline functions. - [FIX] Inline of functions with low level __asm("...") inside is re-enabled. - [FIX] General fix of processing of temporal variables in Common Subexpression Elimination (CSE).
V1.06e	Mar 04 2014	- [FIX] One more bugfix of Common Subexpression Elimination (CSE) optimization on Ospeed.
V1.06d	Feb 19 2014	- [FIX] One more bugfix of Common Subexpression Elimination (CSE) optimization on Ospeed.
V1.06c	Feb 11 2014	- [FIX] Optimizing algorithm of estimation of range of function return value (EVR) is fixed for the case of functions with low level __asm("") code inside. - [FIX] Inlining algorithm is fixed for the case of inlining of functions with low level __asm("") code inside. - [FIX] Bugfix of one of optimizations on Ospeed (Common Subexpression Elimination). - [FIX] Debug information is fixed for variables watch window.
V1.06b	Aug 05 2013	- [NEW] New optimization SizeInline is implemented. The code of called functions is inlined whenever it allows to reduce the size of result code.
V1.06a	Apr 25 2013	- [NEW] New optimization FRVR is implemented. If the result of called function is obvious (like return 0), then it can be used as a known constant by compiler during the optimizations.
V1.05t	Mar 26 2013	- [NEW] New optimization is implemented. Code of assignments of constants into long variables is optimized.
V1.05s	Jan 31 2013	- [FIX] Bug with missing instruction like "ldw a13, @[a10 + 2]" was fixed for code with call of function pointer and low level __asm("") instruction after it.

V1.05r	Dec 20 2012	- [FIX] Binary code of compiler is builds by newest version of IDE - [FIX] Reduce the amount of memory used by the compiler - [FIX] Fix bug of compilation built-in asm with 'CLD' instruction - [FIX] Fix bug of supporting #pragma section - [FIX] Fix bug that leads to compiler fail in rare cases - [FIX] Fix bug with conversion pointers to functions - [FIX] Fix bug with invalid DWARF generation in case of multi-source codes compilation by one pass - [FIX] Problem with negative constants is fixed for some optimization of constants in code - [FIX] Processing of DelaySlot instructions (e.g. BRAD) in high level assembler is improved - [FIX] Problem with some jumps outside the __asm{} block is fixed - [NEW] (SecuCalm) Syntax of LDB instruction is extended in high level assembler. Any general register is allowed to be index register - [FIX] Fix invalid warning in case of multi-source compilation - [FIX] Optimization of array initialization works more effective
V1.05q	Aug 17 2012	- [FIX] Non-zero code will be returned for wrong command line arguments (for example for -LCB instead of -Ospeed(-LCB)). The compilation will be interrupted for wrong parameters - [FIX] (SecuCalm) The effect of operations like "x = 5; y = 32; x <= y;" is modified from "x is not changed" to "x = 0". Both variants are possible according to C Standard - [FIX] Optimization of built-in assembler with jumps and labels works correctly
V1.05p	May 28 2012	- [FIX] Optimization of logical operations works correctly
V1.05o	May 11 2012	- [FIX] The issue with complex nested function calls in parameters of printf was resolved (printf("%f = %f", X, ((X)*180/(4*atan(1))))); - [FIX] The issue with reordering of arguments of floating point arithmetic operations is resolved. The result of calculation will not be changed after the optimization of expression
V1.05n	Mar 26 2012	- [FIX] Bug with optimization of string array initialization is fixed (char strs[4][3] = { {0, 0}, "str", {0, 0}, {0} } ;) - [FIX] new switch +INITLDLLDW is added for size increasing cases of LDL optimization of array initialization - [FIX] LDL optimization of array initialization is switched off by default for -Osize and -Osize debug optimization sets to prevent increasing of code size - [FIX] The bug with tail initialization of non-aligned arrays is fixed - [FIX] Some optimizations work correctly (for example, EvaluateValueRange)
V1.05m	Mar 14 2012	- [FIX] Optimization of addition negative constant works correctly - [FIX] Memory usage is decreased for partial initialization of local arrays (e.g. "int M[200] = {1, 2, 3};") - [FIX] Memory usage is decreased for dynamic initialization of local arrays (e.g. "int M[] = {x, y, z};") - [FIX] Memory usage is decreased for mostly zero initialization of local arrays (e.g. "int M[] = {0, 0, 0, 0, 1, 0, 0, 0, 0, 0};")
V1.05l	Mar 06 2012	- [FIX] Optimization of built-in assembler in string-form works correctly - [FIX] Unresolved external of __agg_0 is resolved for -Ospeed optimization - [FIX] The algorithm of generation of CMP_PD instructions is improved - [FIX] The code generation is now invariant to the names of variables
V1.05k	Feb 28 2012	- [FIX] The initialization of arrays with zero values is optimized. LDL and LDW instructions will be used whenever it is possible - [FIX] EvaluateValueRange optimization works correctly and efficiently

System LSI Division, Semiconductor Business

V1.05j	Feb 21 2012	- [FIX] Initialization of all elements of local arrays is fixed (int M[5] = {0, 0};)
V1.05i	Feb 18 2012	- [FIX] Optimization of C source code with blocks and labels works correctly and efficiently - [FIX] EvaluateValueRange optimization works correctly - [FIX] Optimization of built-in assembler and C source code works correctly and efficiently
V1.05h	Feb 03 2012	- [FIX] The method of initialization of arrays is optimized. LDL and LDW instructions will be used whenever it is possible - [FIX] The DeleteUnreachableCode optimization works with better performance. It delete unused labels correctly. As a result, source code has better optimization by EvaluateValueRange - [FIX] The EvaluateValueRange optimization works correctly in case of nested loops - [FIX] The DeleteUnreachableCode optimization processing points for debug information correctly (it's enabled by '-g' command option) - [FIX] The AlgebraicSimplification stage optimize top-level expressions correctly - [FIX] The SimplifyEvaluation and AlgebraicSimplification optimizations works correctly
V1.05g	Jan 16 2012	- [FIX] Optimization of built-in assembler and C source code works more efficiently
V1.05f	Dec 29 2011	- [FIX] Unknown Internal Error for alone cmp_pd instruction in __asm{cmp_pd;} block is fixed - [FIX] Fix of compilation code with local array initialization for case of constant and variable initializers. Fix of problem with error message "undefined external symbol '___agg_0' " - [NEW] Compiler generates more effective code for local array initialization corresponding to it size
V1.05e	Dec 13 2011	- [FIX] The CMP_PD will be removed together with target instruction (in case of optimization of target instruction) - [FIX] Compiler will not remove extra consecutive CMP_PD instructions. Assembler will be able to generate error in this case - [FIX] Compiler will not move CMP_PD instructions above the nearby label to prevent the direct jump. Assembler will be able to generate error in this case - [FIX] Float constant initialization by overflow value generates special error - [FIX] Structure with zero-length bitfield has valid size - [NEW] Source code with built-in assembler is optimized by constant propagation optimization
V1.05d	Nov 25 2011	- [FIX] Call of function by address of structure member generates valid assembler - [FIX] The compiler at the PreProcessor mode generates more correctly output (without unnecessary spaces, empty lines etc.) - [FIX] Two consequent CMP_PD instructions will not be generated by compiler - [FIX] Direct jumps to CMP_PD will not be generated
V1.05c	Nov 14 2011	- [NEW] The instruction CMP_PD will check always the same target instruction (above it) even after code modification during the optimizations - [FIX] Disappearing of instructions preceding CMP_PD is fixed
V1.05b	Oct 20 2011	- [NEW] Support of CMP_PD instruction is added to the high level assembler of SecuCalm compiler

V1.05a	Sep 05 2011	- [FIX] Correct cursor of warning 'Function should return value' - [FIX] Fix bug of invalid static initialization for strings with different type and same spelling - [FIX] Correct rule of rewriting assembler for 'ADD' command with long const
V1.05_beta01	Aug 11 2011	- [FIX] Modification of EVR (Evaluate value range) optimization for compilation time speedup
V1.04l	Jul 27 2011	- [FIX] Support of 'switch-case' construction in EVR (EvaluateValueRange) optimization - [FIX] Correct usage of "Value Range Optimization" after "Algebraic Simplification" optimization - [FIX] Correct optimization of variable values from incoming control flows by EVR (Evaluate value range) optimization - [FIX] Correct comparison of pointer with zero value in EVR (Evaluate value range) optimization - [FIX] Correct processing of optimization flags in the command line
V1.04k	Jun 28 2011	- [FIX] Correct processing of expressions with ADD and CAST operations by EVR (Evaluate value range) optimization
V1.04j	Jun 17 2011	- [FIX] Support of non-standard concatenation (SOME_FUNC(PARAM) ##_suffix) has been optimized in preprocessor - [FIX] Support of correct format of LDL instruction with auto increment or decrement (LDL R4R5, @[A8+]!, LDL @[A8-], R4R5) has been implemented in built-in high level assembler - [FIX] Correct processing of expression with 'false' condition by ECES (Enhancement of conditional expressions simplification) optimization - [FIX] Correct processing of loops by LoopProcessing optimization
V1.04i	Jun 03 2011	- [FIX] Concatenation for function-like macro and for identifier, following this macro, has been implemented in preprocessor (SOME_FUNC(PARAM) ##_suffix
V1.04g_beta	May 04 2011	- [FIX] Correct generation of optimized code for 'switch' statement - [FIX] Correct code generation for variable initialization between two 'for' loops with the same cycle variable in EVR (Evaluate value range) optimization - [FIX] Correct generation of optimized code for post increment with dereference of pointer (*gp++) by LCB (Low level combining) optimization
V1.04f	Oct 28 2010	- [FIX] Appropriate cast operation generated for unsigned char type - [FXI] Bug fix in composition optimization, node with a function call is not moved - [FIX] Option --no_LDL has been supported to avoid generation of LDL instructions in SecuCalm compiler - [FXI] Bug fix in first code generation for secured keyword
V1.04e	Sep 29 2010	- [FIX] Updated include file search criteria for files included using brackets (#include <file>). - [FIX] Updated code generation rules for type conversion of 'secured' variables. - [FIX] Enhanced the warning generation part regarding the return statement
V1.04d	Aug 11 2010	- [NEW] In SecuCalm, LDL instructions are generated only when -use_LDL option is set. - [FIX] Copy propagation bug fix for intermediate PUSH instruction.
V1.04c	July 26 2010	- [FIX] Code generation changed for MOV RxCx+1, Ax instruction.

V1.04b	Jun 21 2010	- [FIX] Updated variable renaming to set appropriate allocation set for renamed variables. - [FIX] Updated value range optimization to check number of elements in a SET before using it for comparison. - [FIX] Constant reduction not applied for link-time-expression symbols. - [FIX] Included file is closed after its EOF is reached.
V1.04a	May 4 2010	- [NEW] Addressing of long-type variable has been optimized.
V1.04	Apr 23 2010	- [NEW] Redundant cast from unsigned char to int (AND Rn,#0xFF or CLRH Rn) reduced by combining it with AND Rn,#(0-255) instruction. - [FIX] Separate stack location has been assigned to each volatile variable irrespective of their relation with other variables and live range. - [NEW] Option --no_bit_type can be used to disable the 'bit' type processing. When this option is set, token 'bit' is not recognized as a keyword, user can use it as variable name.
V1.03n_beta2	Apr 14 2010	- [FIX] Bug fix in AND/OR/XOR short-hand assignment of secured qualified int variables
V1.03n_beta	Apr 12 2010	- [FIX] Link-time-expression optimization updated to handle ADD/MUL/AND/OR/XOR operations with more than two operands - [FIX] Optimization of high-level inline assembly with LDB for SecuCalm. CLRH has been removed - [FIX] CalmRISC16's assembly parser has been updated to read constant numbers which are more than 22bit range.
V1.03n	Apr 1 2010	- [NEW] Link-time expression optimization implemented. - [FIX] Bug fix in High Level Combining optimization - [FIX] Error generated when dependency file cannot be opened for writing
V1.03m_beta3	Feb 23 2010	- [FIX] Bug fix in value range optimization
V1.03m_beta2	Feb 16 2010	- [FIX] Bug fix in value range optimization
V1.03m_beta1	Feb 8 2010	- [NEW] Size of a variable is generated in the asm file
V1.03l	Jan 27 2010	- [NEW] [CalmRISC16]bit type supported for CalmRISC16 compiler - [NEW] Stack reused enabled for stack size optimization
V1.03k_beta	Jan 22 2010	- [FIX] Bug fix in CSE, control flow updated with the changes done in first pass of CSE
V1.03j	Jan 20 2010	- [FIX] Bug fix in value range optimization when source and destination operands are same - [FIX] Bug fix in algebraic simplification for OR operation - [FIX] Bug fix in CSE, corrected checking of multiple/conditional entry for an expression in a loop.
V1.03i	Dec 31 2009	-[FIX] Bug fix in data-flow-analysis for setting the correct value for store byte operation
V1.03h	Dec 10, 2009	- [FIX] Order of variables not changed due to extern declaration - [FIX] Bug fix in optimization of &= = operators. - [NEW] Code generation changed for switch() statements in debug optimization mode for better debug-ability.
V1.03g	Nov 19, 2009	- [NEW][CalmRISC16] 3byte pointer supported in packed structure. Command line option --ptr3 can be used to enable this optimization. - [FIX] No warning generated when secured and non-secured variables are kept under one #pragma section(...) - [FIX] Corrected #pragma warn <on/off> behavior - [FIX] Error removed while converting a constant to function pointer - [FIX] Wrong pointer addition optimization in optimize mode fixed. - [FIX] Error while initializing variables with address of packed structure corrected. - [FIX] Wrong optimization of const object corrected

V1.03f	Sep 28, 2009	- [FIX] Code generation rule changed for LDB instruction - [FIX] [SecuCalm] Comparison problem with the return value from the function has char return type was fixed.
V1.03e	Sep 18, 2009	- [FIX] [SecuCalm] Debug information for register pair R12.R13 generated
V1.03d	Sep 16, 2009	- [FIX] Unicode character set supported while generating dependency file - [FIX] Wrong optimization of volatile variables fixed
V1.03c	Sep 1, 2009	- [FIX] Compiler error removed when invoked with --copm for local array initialization - [FIX] Compiler error removed for pointer to code in local scope - [FIX] Changed definition of 'jmp_buf' from struct to unsigned int in the <setjmp.h>. - [NEW] All data types and any alignment value which is power of 2 supported in __align(num) keyword
V1.03b	Aug 17, 2009	- [NEW] #pragma function = interrupt_swi_novector (swi_num, exception_base) has been supported to create multiple SWI handlers with same SWI number.
V1.03a	Aug 5, 2009	- [FIX] Bug fix in volatile variable optimization - [FIX] Bug fix in code generation of switch statement with -bo option - [NEW] For SecuCalm, option --copm has been made default - [NEW] Options --depenC <file> and --depenA <file> implemented for header file dependency generation
V1.03	July 24, 2009	- First Release

5.2.2 Assembler

5.2.2.1 Assembler for SecuCalm - CalmAsm16e.exe

Version	Released date	Comments
V1.01f	Dec 9 2011	- [FIX] The type of A214E message ("invalid instruction found before CMP_PD") is changed from warning to error. - [FIX] Generation of error message is implemented for the case of two consecutive CMP_PD instructions. - [FIX] Generation of error message is implemented for the case of direct jump to CMP_PD instructions.
V1.01e	Nov 16 2011	- [FIX] No warning "A030W: jump target must be even" generated in case of LinkTimeExpr optimization at the compiler.
V1.01d	Sep 29 2010	- [FIX] Appropriate relocation generated for \$ operand.
V1.01c	Aug 9 2010	- [FIX] Warning generated when CMP_PD is followed by BREAK, BNZD, RETD, JSR, BS, SJSR, return, POP_RET.
V1.01b	Jul 22 2010	- [NEW] Error generated for MOV RxCx+1, Ax instruction. - [NEW] Instruction DUP RxCx+1, Ex has been added.
V1.01a	May 4 2010	- [FIX] Parsing of labels starting with dot (.) inside a macro has been corrected.
V1.01	Apr 23 2010	- Version changed for official release
V1.00p	Feb 11 2010	- [FIX] No warning generated for undefined symbols in .set .equ symbols
V1.00o	Feb 8 2010	- [NEW] Warning generated on undefined symbols
V1.00n	Dec 11, 2009	- [FIX] JMP <const> is not converted to BRA <const>.
V1.00m	Oct 19, 2009	- [FIX] Debug line information corrected for empty functions.
V1.00l	Aug 3, 2009	- [NEW] Options --depenC <file> and --depenA <file> implemented for header file dependency generation
V1.00k	Apr 30, 2009	- First Release

5.2.2.2 Assembler for CalmRISC16 - CalmADKAs.exe

Version	Released date	Comments
V1.02a	May 4 2010	- [FIX] Parsing of labels starting with dot (.) inside a macro has been corrected.
V1.02	Apr 23 2010	- Version changed for official release
V1.01e	Feb 11 2010	- [FIX] No warning generated for undefined symbols in .set .equ symbols.
V1.01d	Feb 8 2010	- [NEW] Warning generated on undefined symbols
V1.01c	Oct 19,2009	- [FIX] Debug line information corrected for empty functions
V1.01b	Oct 7,2009	- [NEW] Directive .3byte <expr> supported.
V1.01a	Aug 20,2009	-

5.2.3 Linker

5.2.3.1 Linker for SecuCalm - CalmLink16e.exe

Version	Released date	Comments
V1.01t	Apr 10 2014	- [FIX] bugfix of crash in memory gaps optimization.
V1.01s	Oct 30 2013	- [FIX] optimization of reusing of memory gaps is improved - entire memory regions can be moved. - [FIX] bug with _at_ keyword is fixed.
V1.01r	Sep 26 2013	- [FIX] memory gaps optimization is improved - support of IDATA sections is added.
V1.01q	Sep 15 2013	- [NEW] linker optimization is improved - if there are some gaps between memory regions, then the sections are tried to be rearranged between regions in order to fill these gaps.
V1.01p	Sep 5 2013	- [FIX] value of --base-addr option can now be directly used in SJSR optimization during the code execution.
V1.01o	Jul 24 2013	- [FIX] support of OVERLAY memory regions is implemented in MD file for memory areas with specified FILL value.
V1.01n	Jul 22 2013	- [NEW] support of SJSR optimizations (--short-call, --short-call-tab) is implemented in --flashcode mode.
V1.01m	Feb 27 2013	- [FIX] feature "Go To Definition" is fixed.
V1.01l	Jan 26 2012	- [FIX] Linker generates valid debug information in case of CMP_PD instructions.
V1.01k	Jan 13 2012	- [FIX] Linker generates valid value for __EEVAR_SIZE__ symbol. - [FIX] The issue with CMP_PD generation in specific places of code is fixed.
V1.01i	Dec 5 2011	- [FIX] Valid information at the Debugging mode for code with CMP_PD instructions. It was bug for linker mode with inserting CMP_PD instructions to random places.
V1.01h	Nov 23 2011	- [FIX] Two consequent CMP_PD instructions will not be generated by linker.
V1.01g	Oct 20 2011	- [FIX] Bug with sequence of CMP_PD instructions is fixed. There was the following problem: if one CMP_PD instruction is automatically inserted after another CMP_PD instruction, then the operand value of the second instruction can be wrong.
V1.01f	Sep 05 2011	- [FIX] Fix invalid base address for SJSRNEW.
V1.01e	May 26 2011	- [NEW] --callgraph linker option is extended: the stack depth is shown for the functions which are already displayed (they are marked with asterisk('*')). Also the stack depth information was added to call chain for maximum stack depth.

V1.01d	Aug 9 2010	- [FIX] Copy functions used in init-table are not allocated in EXPLICIT area.
V1.01c	Aug 6 2010	- [NEW] CMP_PD is not inserted after BREAK, BNZD, RETD, JSR, BS, SJSR, return, POP_RET. - [NEW] CMP_PD is inserted at same location for every build
V1.01b	Jul 26 2010	- [NEW] 2 word CMP EQ and CMP GE optimized to their 1word form.
V1.01a	May 13 2010	- [NEW] Only one set of (START, LOAD, SIZE) symbols generated for duplicate sections. - [NEW] Sorted list of internal symbols has been printed in the MAP file
V1.01	Apr 26 2010	- [NEW] Address functions StartOf(), EndOf(), MaxEndOf() can be used to specify start address of a load/execution region in the MD file - [NEW] Directive #copy_function = address [, size] has been supported to specify start address of the copy functions used in the init table. Optional size can be specified. Linker generates error if specified size does not match with the calculated size of the copy functions.
V1.00y	Apr 8 2010	- [FIX] Link-time-expression optimization updated to handle ADD/MUL/AND/OR/XOR operations with more than two operands
V1.00x	Mar 30 2010	- [NEW] Link-time expression optimization implemented. - [FIX] Crash removed when trying to read AREA_num of previous exec region.
V1.00w	Feb 17 2010	- [FIX] Call graph algorithm modified for speed issue.
V1.00v	Feb 16 2010	- [New] Size of a variable is printed in the MAP file
V1.00u	Feb 8 2010	- [NEW] Command line option --max-stack-depth supported to print only maximum stack depth with corresponding call chain in the CGF file
V1.00t	Jan 28 2010	- [NEW] Memory area attribute EXPLICIT supported to avoid allocation of unspecified functions in it. - [NEW] Special directives FILL(size, [buf]) and FILL_EXACT(size, [buf]) supported to insert a fill of specified bytes at a location in a load region. FILL_EXACT generates a warning when specified size is not same as length of the buffer. - [NEW] Stack/heap allocated after relax optimization - [NEW] Duplicate function call chain not printed in the CGF file - [NEW] Command line option --lib-as-source and MD file directive #lib_as_source has been supported to allocate sections in lib files in a normal way.
V1.00s	Dec 11, 2009	- [FIX] Restored old behavior of heap/stack allocation. Linker now allocates stack of 0x200 bytes first and then heap of 0x500 bytes.
V1.00r	Nov 18, 2009	- [FIX] Error generated when PM or DM not specified in the MD file. - [NEW] Warning generated calculated maximum stack depth is more than the allocated stack size. - [NEW] By default heap of 500 bytes is allocated and remaining RAM space is used for stack. - [NEW] New command line option --max-heap has been supported, to allocate stack of 500 bytes and remaining RAM space is used for heap.
V1.00q	Nov 4, 2009	- [FIX] No load image generated for sections with NOINIT flag
V1.00p	Oct 16, 2009	- [NEW] KEEP(...) supported in the MD file to avoid garbage collection of specified sections - [NEW] SYMBOLS(...) in MD file and command line option --create-symbols supported to generate C usable symbols. - [NEW] Execution region attribute FIXED has been supported to generate same load and execution address when non-zero +offset is used. - [NEW] Option --no-zdata-init has been supported to keep ZDATA sections un-initialized - [NEW] ZDATA sections in EEP area are not initialized when they are placed under NOINIT execution region attribute. - [NEW] In the map file, scope of a symbol (GLOBAL / LOCAL) is printed

System LSI Division, Semiconductor Business

V1.00o	Oct 1, 2009	- [FIX] Modified compression algorithm.
V1.00n	Sep 15, 2009	- [NEW] Debug line information removed for sections without any flags.
V1.00m	Sep 10, 2009	- [FIX] Crash removed while optimizing for SJSR instruction.
V1.00l	Sep 07, 2009	- [FIX] Appropriate allocation flags set to sections without any flags
V1.00k	July 17, 2009	- [NEW] Multiple base addresses supported for SJSR instruction with #sjsr_base = <addr> and SJSRTARGET method. - [NEW] Special symbol created for .swihandler_xx_yy sections.
V1.00j	July 13, 2009	- First Release

5.2.3.2 Linker for CalmRISC16 - CalmSDKLd.exe

Version	Released date	Comments
V1.02e	Jul 24 2013	- [FIX] support of OVERLAY memory regions is implemented in MD file for memory areas with specified FILL value.
V1.02d	Feb 27 2013	- [FIX] feature "Go To Definition" is fixed.
V1.02c	May 26 2011	- [NEW] --callgraph linker option is extended: the stack depth is shown for the functions which are already displayed (they are marked with asterisk('*')). Also the stack depth information was added to call chain for maximum stack depth.
V1.02b	Jul 24 2010	- [NEW] 2 word CMP EQ and CMP GE optimized to their 1word form.
V1.02a	May 26 2010	- [NEW] Only one set of (START, LOAD, SIZE) symbols generated for duplicate sections. - [NEW] Sorted list of internal symbols has been printed in the MAP file
V1.02	Apr 23 2010	- Version changed for official release
V1.01x	Apr 8 2010	- [FIX] Link-time-expression optimization updated to handle ADD/MUL/AND/OR/XOR operations with more than two operands
V1.01w	Mar 30 2010	- [NEW] Link-time expression optimization implemented. - [NEW] Address functions (StartOf, EndOf, MaxEndOf) supported for start address of an load/exec region.
V1.01v	Mar 10 2010	- [NEW] Command line option --avoid-swi-area has been supported to avoid allocation of unspecified sections in SWI vector area. - [NEW] Debug info of optimized JSR has been changed
V1.01u	Feb 17 2010	- [FIX] Speed of call graph algorithm improved.
V1.01t	Feb 16 2010	- [NEW] Size of a variable is printed in the MAP file - [NEW] EXPLICIT and FILL()/FILL_EXACT() supported - [NEW] Stack/heap allocated after optimization
V1.01s	Feb 8 2010	- [NEW] Command line option --max-stack-depth supported to print only maximum stack depth with corresponding call chain in the CGF file
V1.01r	Jan 28 2010	- [NEW] Duplicate function call chain not printed in the CGF file - [NEW] Command line option --lib-as-source and MD file directive #lib_as_source has been supported to allocate sections in lib files in a normal way. - [NEW] Command line option -m<name> has been supported to suppress warnings
V1.01q	Dec 11, 2009	- [FIX] Restored old behavior of heap/stack allocation. Linker now allocates stack of 0x200 bytes first and then heap of 0x500 bytes.
V1.01p	Dec 1, 2009	- [NEW] Size of CGF file reduced by not printing the repeated call chains
V1.01o	Nov 18, 2009	- [FIX] Error generated when PM or DM not specified in the MD file. - [NEW] Warning generated calculated maximum stack depth is more than the allocated stack size. - [NEW] By default heap of 500 bytes is allocated and remaining RAM space is used for stack. - [NEW] New command line option --max-heap has been supported, to allocate stack of 500 bytes and remaining RAM space is used for heap.

V1.01n	Nov 2, 2009	- [FIX] No load image generated for sections with NOINIT flag
V1.01m	Oct 27, 2009	- [NEW] KEEP(...) supported in the MD file to avoid garbage collection of specified sections - [NEW] SYMBOLS(...) in MD file and command line option --create-symbols supported to generate C usable symbols. - [NEW] Execution region attribute FIXED has been supported to generate same load and execution address when non-zero +offset is used. - [NEW] Option --no-zdata-init has been supported to keep ZDATA sections un-initialized - [NEW] ZDATA sections in EEP area are not initialized when they are placed under NOINIT execution region attribute. - [NEW] In the map file, scope of a symbol (GLOBAL / LOCAL) is printed
V1.01l	Oct 12, 2009	- [NEW] Relocation for 3byte pointer supported
V1.01k	Sep 15, 2009	- [NEW] Debug line information removed for sections without any flags
V1.01j	Sep 07, 2009	- [FIX] Appropriate allocation flags set to sections without any flags
V1.01i	June 29, 2009	- First Release

5.2.4 Librarian - CalmSDKAr.exe

Version	Released date	Comments
V1.00d	Dec 19, 2008	- First Release

5.2.5 Library

Version	Released date	Comments
V1.05q	Jul 17 2012	- [SecuCalm] Built using compiler V1.05q and assembler V1.01f - [CalmRISC16] Built using compiler V1.05o and assembler V1.02a
V1.05o	May 11 2012	- [SecuCalm] Built using compiler V1.05o and assembler V1.01f - [CalmRISC16] Built using compiler V1.05o and assembler V1.02a
V1.05n	Apr 23 2012	- [SecuCalm] Built using compiler V1.05n and assembler V1.01f - [CalmRISC16] Built using compiler V1.05n and assembler V1.02a
V1.04f	Oct 28 2010	- [SecuCalm] Built using compiler V1.04f and assembler V1.01d - [CalmRISC16] Built using compiler V1.04f and assembler V1.02a
V1.04c	Jul 26 2010	- [SecuCalm] Built using compiler V1.04c and assembler V1.01b - [CalmRISC16] Built using compiler V1.04c and assembler V1.02a
V1.04a	May 4 2010	- [SecuCalm] Built using compiler V1.04a and assembler V1.01a - [CalmRISC16] Built using compiler V1.04a and assembler V1.02a
V1.04	Apr 23 2010	- [SecuCalm] Built using compiler V1.04 and assembler V1.01 - [CalmRISC16] Built using compiler V1.04 and assembler V1.02
V1.03n	Apr 1 2010	- [SecuCalm] Built using compiler V1.03n and assembler V1.00p - [CalmRISC16] Built using compiler V1.03n and assembler V1.01e
V1.03m_beta3	Feb 24 2010	- [SecuCalm] Built using compiler V1.03m_beta3 and assembler V1.00p - [CalmRISC16] Built using compiler V1.03m_beta3 and assembler V1.01e
V1.03l	Jan 27, 2010	- [SecuCalm] Built using compiler V1.03l and assembler V1.00n - [CalmRISC16] Built using compiler V1.03l and assembler V1.01c
V1.03h	Dec 10, 2009	- [SecuCalm] Built using compiler V1.03h and assembler V1.00m - [CalmRISC16] Built using compiler V1.03h and assembler V1.01c
V1.03g	Nov 18, 2009	- [SecuCalm] Built using compiler V1.03g and assembler V1.00m - [CalmRISC16] Built using compiler V1.03g and assembler V1.01c

System LSI Division, Semiconductor Business

V1.03f	Sep 28, 2009	- [FIX] Stack overflow check library modified for correct detection of stack overflow - [SecuCalm] Built using compiler V1.03f and assembler V1.00l - [CalmRISC16] Built using compiler V1.03f and assembler V1.01a
V1.03c	Sep 8, 2009	- [SecuCalm] Built using compiler V1.03c and assembler V1.00l - [CalmRISC16] Built using compiler V1.03c and assembler V1.01a
V1.03	Aug 5, 2009	Built using compiler V1.03 and assembler V1.00k
V1.02h	Jun 29, 2009	Built using compiler V1.02h and assembler V1.00k